


In the Claim

Claims 1-34 (Cancelled).

35. (Currently amended) A method of forming an aluminum comprising line having a titanium nitride comprising layer thereon, the method comprising:

in a processing tool, physical vapor depositing a first layer comprising at least one of elemental aluminum or an aluminum alloy over a substrate in a first chamber, at least an outermost portion of the first layer being deposited at a first deposition temperature of at least 400°C;

 ~~without letting the outermost portion of the first layer cool from the first deposition temperature to a temperature below 360°C,~~ physical vapor depositing at least one of elemental titanium and or a titanium alloy on the first layer in a second chamber of the processing tool while at least an outer portion of the first layer is at a temperature of at least about 360°C, and forming therefrom a second layer comprising an alloy of titanium and the aluminum from the first layer in the second chamber during said depositing, the alloy having a higher melting point than that of the first layer, and wherein essentially all the physical vapor deposited titanium alloys with the aluminum of the first layer during the depositing, the outermost portion of the first layer sustaining a temperature of at least 360°C between the depositing the first layer and the depositing at least one of elemental titanium and titanium alloy on the first layer;

physical vapor depositing a third layer comprising titanium nitride on the second layer;

removing the substrate from the processing tool after depositing the third layer, and forming the first, second and third layers into a conductive line.

36. (Previously presented) The method of claim 35 comprising depositing the second layer to have a thickness of from about 50 Angstroms to about 150 Angstroms.

37. (Previously presented) The method of claim 35 comprising depositing the second layer to have a thickness of from about 100 Angstroms to about 200 Angstroms.

38. (Previously presented) The method of claim 35 wherein the first layer consists essentially of elemental aluminum, an aluminum alloy, or a mixture thereof.

39. (Previously presented) The method of claim 35 wherein the first layer consists essentially of elemental aluminum.

40. (Previously presented) The method of claim 35 wherein the physical vapor depositing at least one of elemental titanium or a titanium alloy comprises physical vapor depositing elemental titanium.

41. (Previously presented) The method of claim 35 wherein temperature of at least an outer portion of the first layer is at least about 360°C during the physical vapor depositing of the third layer.

42. (Previously presented) The method of claim 35 wherein the third layer physical vapor depositing occurs in the second chamber of the processing tool.

43. (Previously presented) The method of claim 35 wherein the physical vapor depositing of at least one of elemental titanium or a titanium alloy on the first layer in the second chamber of the processing tool comprises physical vapor depositing a titanium alloy layer, and forming therefrom a second layer comprising an alloy of titanium and the aluminum from the first layer in the second chamber during said depositing.


44. (Previously presented) The method of claim 35 wherein the first deposition temperature is at least about 450°C.

45. (Previously presented) The method of claim 35 wherein the first deposition temperature is greater than 450°C.

46. (Previously presented) The method of claim 35 wherein after the first layer physical vapor depositing and before beginning the physical vapor depositing of the at least one of elemental titanium or titanium alloy, letting the outermost portion of the first layer cool from the first deposition temperature by 25°C or less.

47. (Previously presented) The method of claim 35 wherein the first deposition temperature is at least about 450°C, and wherein after the first layer physical vapor depositing and before beginning the physical vapor depositing of the at least one of elemental titanium or titanium alloy, letting the outermost portion of the first layer cool from the first deposition temperature by 25°C or less.

48. (Previously presented) The method of claim 35 wherein the first deposition temperature is greater than 450°C, wherein after the first layer physical vapor depositing and before beginning the physical vapor depositing of the at least one of elemental titanium or titanium alloy, letting the outermost portion of the first layer cool from the first deposition temperature by 25°C or less.

 Claims 49-74 (Cancelled).

75. (New) The method of claim 35 further comprising:
providing an insulative material over the substrate;
forming a contact opening within the insulative material;
depositing a wetting layer within the contact opening; and
wherein the depositing the first layer over the substrate comprises depositing the first layer over the wetting layer.
